



PATENT  
Attorney Docket No. UCSD-06555

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Judith A. Varner

Serial No.: 09/307,223

Group No.: 1642

Filed: May 7, 1999

Examiner: S. Ungar

Entitled: **Methods For Detecting And Inhibiting  
Angiogenesis**

**SUPPLEMENTAL INFORMATION  
DISCLOSURE STATEMENT**

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CERTIFICATE OF MAILING UNDER 37 CFR § 1.8(a)	
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231, on	
<u>11-21-2002</u>	By: <u>[Signature]</u> Cliff Cannon-Cin

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12-21-02

Sir or Madam:

The citations listed below, copies attached, may be material to the examination of the above-identified application, and are therefore submitted in compliance with the duty of disclosure defined in 37 C.F.R. §§ 1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

The citations listed in the accompanying form PTO-1449 as numbers 1, 5, 8 and 9 are **NOT** provided as they were cited by the Office in an Office Action mailed 3/9/01.

- US Patent No. 5,922,676 issued 7/13/99 to Pasqualini *et al.*;
- WO 95/14714 published 1/6/95;
- Thorpe in *Monoclonal Antibodies in Biological and Clinical Applications*, Pinchera *et al.*, eds, 1995, pages 475-506; and
- Gallin *et al.* in *Inflammation: Basic Principles and Clinical Correlates*, Raven Press, NY, 1988; page 552.

The citations listed in the accompanying form PTO-1449 as numbers 10-24 are **NOT** attached herewith as they were provided in a Response filed 9/5/01 in the instant application:

- Takada *et al.* (1988) "Extracellular Matrix Receptors, ECMRII and ECMRI, for Collagen and Fibronectin correspond to VLA-2 and VLA-3 in the VLA Family of Heterodimers," J. Cell. Biochem. 37:385-393;
- Takada *et al.* (1987) "Fibronectin receptor structures in the VLA family of heterodimers," Nature 326:607-609;
- Elices *et al.* (1991) "Receptor Functions for the Integrin VLA-3: Fibronectin, Collagen, and Laminin Binding are Differentially Influenced by Arg-Gly-Asp Peptide and by Divalent Cations," J. Cell Biol. 112:169-181;
- Masumoto & Hemler (1993) "Multiple activation states of VLA-4. Mechanistic differences between adhesion to CS1/fibronectin and to vascular cell adhesion molecule-1," J. Biol. Chem. 268:228-234;
- Zhang *et al.* (1993) "The  $\alpha_v\beta_1$  Integrin Functions as a Fibronectin Receptor But Does Not Support Fibronectin Matrix Assembly and Cell Migration on Fibronectin." J. Cell Biol. 122:235-242;
- Ruegg *et al.* (1992) "Role of integrin  $\alpha_4\beta_7/\alpha_4\beta_P$  in Lymphocyte Adherence to Fibronectin and VCAM-1 and in Homotypic Cell Clustering," J. Cell Biol. 117:179-189;
- Orlando and Cheresch (1991) "Arginine-Glycine-Aspartic Acid Binding Leading to Molecular Stabilization Between Integrin  $\alpha_v\beta_3$  and Its Ligand," J. Biol. Chem. 266:19543-19550;
- Suehiro *et al.* (1997) "Fibrinogen is a Ligand for Integrin  $\alpha_5\beta_1$  on Endothelial Cells," J. Biol. Chem. 272:5360-5366;
- Suehiro *et al.* (2000) "Fibrinogen Binds to Integrin  $\alpha_5\beta_1$  via the Carboxyl-Terminal RGD site of the A $\alpha$ -chain," J. Biochem. 128:705-710;
- Felding Haberman *et al.* (1997) "A Single Immunoglobulin-like Domain of the Human Neural Cell Adhesion Molecule L1 Supports Adhesion by Multiple Vascular and Platelet Integrins." J. Cell Biol. 139:1567-1581;
- Silletti *et al.* (2000) "Plasmin Sensitive Dibasic Sequences in the Third Fibronectin-like Domain of L-cell Adhesion Molecule (CAM) Facilitate Homomultimerization and Concomitant Integrin Recruitment," J. Cell Biol. 149:1485-102;

- Rehn *et al.* (2001) "Interaction of endostatin with integrins implicated in angiogenesis" Proc. Natl. Acad. Sci. 98:1024-1029;
- Carlson *et al.* (2001) "Direct Cell Adhesion to the Angiopoietins Mediated by Integrins," J. Biol Chem. 276:26516-26525;
- Marcinkiewicz *et al.* (1999) "Structural and Functional Characterization of EMF10, a Heterodimeric Disintegrin from *Eristocophis macmahoni* Venom that Selectively Inhibits  $\alpha_5\beta_1$  Integrin" Biochem. 38:13302-13309; and
- Wierzbicka-Potynowski *et al.* (1999) "Structural requirements of Echistatin for the Recognition of  $\alpha_v\beta_3$  and  $\alpha_5\beta_1$  Integrins," J. Biol. Chem. 274:37809-14.

The citations listed in the accompanying form PTO-1449 as numbers 25-28 are **NOT** attached herewith as they were provided in a Response filed 2/19/02 in the instant application.

- Yi and Ruoslahti (2001) "A fibronectin fragment inhibits tumor growth, angiogenesis, and metastasis," Proc. Natl. Acad. Sci. 98:620-624;
- Varner *et al.* (1995) "Integrin  $\alpha_5\beta_1$  Expression Negatively Regulates Cell Growth: Reversal by Attachment to Fibronectin," Mol. Biol. Cell 6:725-740;
- Morla *et al.* (1994) "Superfibronectin is a functionally distinct form of fibronectin," Nature 367:193-198; and
- Kim *et al.* (2000) "Regulation of Angiogenesis *in Vivo* by Ligation of Integrin  $\alpha_5\beta_1$  with the Central Cell-Binding Domain of Fibronectin," Am. J. Pathol. 156:1345-1362.

Applicant has become aware of the following printed publications, **copies attached**, which may be material to the examination of this application:

- US Patent No. 5,567,417 issued Oct. 22, 1996 to Sasisekharan *et al.*;
- US Patent No. 5,866,540 issued Feb. 2, 1999 to Jonczyk *et al.*;
- US Patent No. 6,177,542 issued January 23, 2001 to Ruoslahti *et al.*
- WO 93/15203 published 8/5/93;
- WO 96/04304 published 2/15/96;
- Pasqualini *et al.* (1996) "A polymeric form of fibronectin has antimetastatic effects against multiple tumor types," Nature Med. 2:1197-1203;
- Kumar *et al.* (1997) "Biochemical Characterization of the Binding of Echistatin to Integrin  $\alpha_v\beta_3$  Receptor," J. Pharmacol. Experimen. Therap. 283:843-853;

- Nowlin *et al.* (1993) "A Novel Cyclic Pentapeptide Inhibits  $\alpha 4\beta 1$  and  $\alpha 5\beta 1$  Integrin-mediated Cell Adhesion," J. Biol. Chem. 268:20352-20359;
- Takagi *et al.* (1997) "Structural Interlock between Ligand-Binding Site and Stalk-Like Region of  $\beta 1$  Integrin Revealed by a Monoclonal Antibody Recognizing Conformation-Dependent Epitope," J. Biochem. 121:914-921; and
- Kim *et al.* (2002) "Inhibition of endothelial cell survival and angiogenesis by protein kinase A," J. Clin. Invest. 110:933-941.

The citations listed in the accompanying form PTO-1449 as numbers 34-39 are attached to the accompanying "Amendment and Response and Tabs 1-6.

- Clark *et al.* (1982) "Blood vessel fibronectin increases in conjunction with endothelial cell proliferation and capillary ingrowth during wound healing," J Invest Dermatol. Nov;79(5):269-76;
- Castellani *et al.* (1994) "The fibronectin isoform containing the ED-B oncofetal domain: a marker of angiogenesis," Int J Cancer. 59:612-618;
- Neri *et al.* (1997) "Targeting by affinity-matured recombinant antibody fragments of an angiogenesis associated fibronectin isoform," Nat Biotechnol. Nov;15(12):1271-5;
- Mariani *et al.* (1997) "Tumor targeting potential of the monoclonal antibody BC-1 against oncofetal fibronectin in nude mice bearing human tumor implants, Cancer. Dec 15;80(12 Suppl):2378-84;
- Pasqualini *et al.* (1996) "A polymeric form of fibronectin has antimetastatic effects against multiple tumor types," Nature Medicine 2(1):1197-1203.; page 1197, column 2, last paragraph; and
- Kumar *et al.* (1997) "Biochemical characterization of the binding of echistatin to integrin  $\alpha v \beta 3$  receptor," Journal of Pharmacology and Experimental Therapeutics, 283(2):843-853.

This Information Disclosure Statement under 37 C.F.R. §§ 1.56 and 1.97 is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that any one or more of these citations constitutes prior art.

Dated: \_\_\_\_\_

11/21/02

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